The University of Chicago

THE MATERIAL CULTURE OF EARLY IRAN

A PART OF A DISSERTATION SUBMITTED TO THE FACULTY OF THE DIVISION OF THE HUMANITIES IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF ORIENTAL LANGUAGES
AND LITERATURES
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Reprinted from
Journal of Near Eastern Studies
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The land of Iran has fortunately shared in the considerable archeological activity of the last ten years. A fairly large body of purely archeological material, greatly augmenting our knowledge of the early periods, is now available and makes possible a sketch of the cultural history within this land. Stress must be laid on the fact that this skeleton history, based on a technical study of the comparative stratigraphy,[1] presents only such a picture as is indicated by the material now known. For this material, frequently derived from widely scattered areas and usually known from only one site in a given region, thus remains unchecked by similar archeological sequences. May new excavations solve the numerous problems arising from all too limited evidence!

I

The earliest known culture in Iran, which for the sake of convenience may be called the Siyalk culture,[2] has been found only in the north-central part of that land at Tepe Siyalk near Kashan and at Chashmah Ali (Rayy) near Teheran. We know little of its extent, nor can its position relative to the established Mesopotamian sequence be precisely determined since connections with regions outside Iran are

[1] Donald E. McCown, *The Comparative Stratigraphy of Early Iran* ("Studies in Ancient Oriental Civilization," No. 23 [Chicago: University of Chicago Press, 1942]). Much of the evidence for statements made in this article will be found in this study, hereafter abbreviated *SAOC*, No. 23. Other abbreviations employed are: *Hissar:* E. F. Schmidt, *Excavations at Tepe Hissar Damghan* (Philadelphia: University of Pennsylvania Press, 1937); *Mém.:* France, Mission archéologique de Perse, *Mèmoires*, Tomes XVI-XXV (Paris, 1921–34); *OIC:* University of Chicago, Oriental Institute, "Oriental Institute Communications" (Chicago: University of Chicago Press, 1922——); *OIP:* University of Chicago, Oriental Institute, "Oriental Institute Publications" (Chicago: University of Chicago Press, 1924——); *Racial Types:* Wilton M. Krogman, *Racial Types from Tepe Hissar, Iran, from the Late Fifth to the Early Second Millennium B.C.* ("Verhandelingen der Koninklijke Nederlandsche Akademie van Wetenschappen, Afdeeling Natuurkunde, Tweede Sectie," Vol. XXXIX, No. 2 [Amsterdam: N. V. Noord-Hollandsche Uitgevers Maatschappij, 1940]); R. Ghirshman, *Sialk I* and *II: Fouilles de Sialk près de Kashan 1933, 1934, 1937* ("Musée du Louvre, Département des antiquités orientales, série archéologique Vols. IV–V [Paris: Paul Geuthner, 1938–39]), Vols. I–11; *Giyan:* G. Contenau and R. Ghirshman, *Fouilles de Tépé Giyan près de Nehavend 1931 et 1932* ("Musée du Louvre, Département des antiquités orientales, série archéologique," Vol. III [Paris: Paul Guethner, 1935]).

[2] *SAOC*, No. 23, p. 12. See Tables 1 and 2 below, pp. 448 f.

lacking. The following period, however, is contemporary with the Halaf period,[3] so it is likely that the Siyalk culture is as early as the pre-Halaf cultures of northern Mesopotamia and Syria. Of considerable interest is the fact that at this early time the people in this part of Iran were mixed racially. Vallois,[4] in his study of the Siyalk skeletal material, defines two groups present in Siyalk I: hyperdolichocephalic and dolichocephalic; he considers that they represent proto-Iranian and proto-Mediterranian groups, respectively. In addition, it is possible that a brachycephalic element, which he calls Alpine, was already present.[5]

These people formed a self-contained unit successfully using the resources close at hand to exercise a considerable degree of control over nature with a fair amount of technical equipment.[6] They made the walls of their settled dwellings with beaten mud; they cut grain with flint blades set in bone holders, grinding it on saddle-shaped querns and in mortars; and they had at least one variety of domesticated sheep[7] and thus were not purely dependent on hunting for their meat supply. Indeed, the basic subsistence economy which is characteristic of Iran down to present times was already existing. Although this was a Chalcolithic culture, it is unlikely that metal had been long in use. The forms of the awls and pins are quite simple; they are hammered, and metal awls had not begun to displace bone awls. A supply of copper was at hand not far to the south of Siyalk.

The pottery developed technically throughout the period but was still a somewhat simple product. Both a light-surfaced ware and a red ware were used. That basketry served as a model, from which the shape and design of the pottery was copied, is far from certain. Certain features of shape which are soon present indicate that we do not have here the first attempts at making pottery. If the makers were near to a stage when baskets were closely copied, it is surprising to find that the designs are at first on the interiors of vessels only. In this connection it is also peculiar that the designs which look most like those derived from basketry[8] do not occur until the middle of this period at Siyalk.

[3] See n. 48.

[4] *Sialk II*, pp. 113–92.

[5] *Ibid.*, p. 160.

[6] For this period see *Sialk I*, pp. 10–24.

[7] Vaufrey in *Sialk II*, p. 197.

[8] *Sialk I*, Pl. XXXVII S.1568.

Spindle whorls imply the making of yarn and weaving. Aside from a simple flint industry, stone was worked into useful objects, and the available material suggests an increase in this industry toward the end of the period, when stone was used for bracelets and beads. Life must have been relatively peaceful, for the extant armament is simple and limited, comprising ably made stone maceheads and slingballs of clay. Flaked, occasionally polished, stone axes and adzes should have permitted woodworking and could have been used as hoes.

The pottery design affords some slight perception of the mentality of the people themselves. Though the geometric elements of the design doubtless had a meaning other than purely decorative, these people did apply them in a decorative series of not too elaborate compositions. They appreciated the rhythm of repeated and opposed units and of the zigzag. They also decorated some of their bone holders for flint blades with animal heads and, in a unique example, with the figure of a man whose face is unfortunately missing. He wears what appears to be a conical hat and a garment coming down to his knees, belted at the waist.

So far as we know, the forces of nature which impress all primitive peoples were not represented in any recognizable form, with the possible exception of the ornamentation on the bone and stone flint-blade holders.

In a tightly flexed position and covered with red ocher, the dead were buried within the village in a trench in the earth. With but one exception—which, nevertheless, would seem to indicate that provision was sometimes made for life after death—mortuary gifts were absent.

There are some highly tentative indications that the Siyalk culture evolved from the fusion of two originally distinct cultures.[9] It is not unlikely that people with a culture characterized by red ware mixed with others typified by light-surfaced pottery and in the latter part of the period gained a predominance which became complete in the succeeding Chashmah Ali period.[10] The change to the new period cannot however, be correlated with the limited amount of cranial evidence. The proto-Mediterranian and proto-Iranian groups continue, and the Alpine element is now certainly represented.

[9] *SAOC*, No. 23, pp. 1 f.

[10] Table 1 below; see also *SAOC*, No. 23, p. 12.

The men of the Chashmah Ali culture were no longer confined to their own small region for their resources. By the latter part of this period shells from the Persian Gulf and turquoise from Khorasan[11] were brought to Siyalk and indicate that the world was opening up to a degree. The very extent of this culture from Anau in the northeast to Chashmah Ali and Savah in the west and Kashan in the south is impressive.[12] It is true that it is found only in peripheral form in the lower part of the first level at Anau in Turkestan, but even there (as in Iran proper) a tradition continuing from the Siyalk culture is clearly shown.[13]

The change from the Siyalk to the Chashmah Ali period is gradual, but a series of new traits which appear in the latter period clearly distinguishes the one from the other. The new period shows improvement in techniques and tools. Dwellings become more sophisticated with the use of handmade bricks, at first in the floors and then in the walls, which were also covered with mud plaster and sometimes painted. Some metal awls were strengthened by being made partially rectangular in cross-section. Though not many metal objects were found at Siyalk, the use of copper may be assumed to have been commoner, for the number of bone awls decreases. Stone and flint tools were still common and to the older types was added a prismatic crystal drill, while stone axes and hoes were improved by usually polishing the chipped surfaces. It was now also possible to make vessels and beads from hard stones.

The pottery is technically improved, though it derives from the red ware of the Siyalk culture. It may have been fired in ovens with a controlled draft, such as that found in the first phase of the succeeding period at Siyalk, although the fuel and the vessels to be baked were still placed in the same chamber. The forms of the clay vessels at Siyalk are not so markedly advanced over those of the preceding period, though this is less true at Chashmah Ali. There is decided improvement, however, in the design. After a transitional phase at Siyalk, when designs of the Siyalk period had been replaced almost completely, there are both an increase in the number of elements used

[11] *Sialk I*, pp. 31, 33.

[12] For this culture see *ibid.*, pp. 24–33, and *SAOC*, No. 23, pp. 2–5.

[13] *SAOC*, No. 23, pp. 3–5.

and an improvement in their orderly arrangement, as well as new methods of composition. The smooth profiles of the vessels do not aid in a tectonic application of the design to particular areas; but the smooth curves are finely emphasized by vertical lines which run from the zones of design at the rims to the bases of the vessels. An appreciation of the curvilinear also is now seen. The appearance of representative design is a real departure and may possibly be attributed to influence from another area. These animal designs are rendered in a decorative fashion and witness genuine artistic achievements which still give pleasure to the observer. Contrasting strongly with vibrant ibex, from whose heels rise waves of dust, is a wooden, geometric type of animal. Thus the people of this period were as far ahead of the men of the Siyalk period artistically as they were technically. That this design is still not too highly sophisticated is clearly observable in the loose composition of zones of ibexes or of other elements. If the presence of a more highly developed repertoire of designs and ceramic forms may be interpreted as meaning that a site is close to the focus of a culture, we could consider that Chashmah Ali is nearer the center of this culture than Siyalk.

There is no indication in the Chashmah Ali period to suggest that the fundamental mode of life has changed. Domesticated sheep, pig, and dog, and possibly also the horse, belong to the people at this time.[14] The same domesticated animals are found in the contemporary level at Anau[15] if we may assume that the *Bos taurus* at Siyalk is also domesticated. If the men who caused the accumulation of the lowest part of this level at Anau were without domesticated animals,[16] this may be explained by noting the peripheral location of the site. Anau does, however, provide information as to the grains used: common wheat (*Triticum vulgare*) and two-rowed barley (*Hordeum distichum*).[17]

Funerary customs were like those of the Siyalk period, though none of the burials was furnished with any equipment. A mental change, however, may perhaps be detected in the use of baked clay and stone figurines of the flock.

[14] Vallois in *Sialk II*, pp. 195–97.

[15] The upper part of Anau I A (below ±0 feet).

[16] R. Pumpelly *et al.*, *Explorations in Turkestan, Expedition of 1904, Prehistoric Civilizations of Anau* (Washington, D.C.: Carnegie Institution of Washington, 1908), I, 39 f.

[17] *Ibid.*, II, 472 f.

By the time of the Chashmah Ali period another culture was settled in Iran in a much more extensive area covering the region from at least the Kirmanshah-Hamadan road southward into the present provinces of Fars, Laristan, and Kirman. This civilization is known as the buff-ware culture and manifested itself in variant forms in the various subregions, but, unfortunately, we know less about it at this time than we do of the contemporary Chashmah Ali culture.

Closest to the area of the Chashmah Ali culture is Tepe Giyan, which lies near Nihavend to the southeast of Kirmanshah. Here, the fifth and lowest level was built up during four stages. The earliest and succeeding phases, A and B, respectively, are both contemporary with the Chashmah Ali period.[18] Stage B, however, may overlap the beginning of the succeeding period of north-central and northeastern Iran[19] and probably represents an aspect of the buff-ware culture different from that of phase A. At contemporary Giyan, though the mode of life was doubtless much the same as in the Chashmah Ali culture, civilization was apparently not so well advanced. Walls were built of beaten earth only, though sometimes on stone foundations, and the first appearance of metal, in the form of awls with rectangular cross-sections, is recorded.[20]

Mention has already been made of the probability that the Chashmah Ali period is contemporaneous with the Halaf period.[21] The appearance, therefore, of Halafian influence[22] at the very end of the second and the beginning of the third phase (C) at Giyan, suggests the possibility that it reflects the end of the Halaf culture before the incoming Ubaid peoples. This influence is probably due to the interaction of the Halaf and the Ubaid cultures while the latter was still in contact with its home region, though it might possibly be the result of the retreat of some of the peoples of the Halaf culture into the mountains to the east of their home.

Only in Fars are other stratified remains, contemporary with the Chashmah Ali period, known. The earliest culture of Tall-i-Bakun B,[23] of a very simple type, may be neolithic or epi-neolithic, since it is probably not earlier than the Siyalk period. The succeeding culture (Ba-

[18] *SAOC*, No. 23, pp. 13 f.
[19] *Ibid.*, pp. 13–15.
[20] *Giyan*, pp. 44, 63.
[21] See n. 48.
[22] P. 438 and *SAOC*, No. 23, pp. 33f.
[23] Schmidt, *OIC*, No. 21, pp. 123 f.; *SAOC*, No. 23, p. 23.

kun B II) affords the earliest appearance of the buff-ware culture in this region, while showing no indications of relationship with the earlier culture. It seems to be contemporary, however, with the first phase of the Giyan buff-ware variant, with the Chashmah Ali period, and with Samarra in northern Mesopotamia.[24]

To be sure, the Nihavend region and Fars were not the only regions where the buff-ware culture existed at this time. The site of Musyan was doubtless inhabited, and an earlier stage of the particular aspect of the buff-ware culture which we know from Susa I doubtless existed in one of the unexplored regions of Iran.

Returning to the northeast of Iran, we discover that the Chashmah Ali culture has been succeeded by the Hissar culture.[25] This period is perhaps the most significant epoch in the early history of Iran. The appearance of the potter's wheel and open-mold casting would alone make it so; but, as well, during the period there is considerable change, climaxed by the coming of a completely new culture.

Yet the basic subsistence economy remained founded on agriculture and animal husbandry, and the physical types were still the same. Outside contacts apparently increased, but there is no evidence to suggest that any village produced goods (other than semiprecious stones) for export.

Owing to stratigraphic gaps, it is not possible to explain the changes which occurred between the end of the Chashmah Ali period and the beginning of the Hissar period. Yet it is clear at Siyalk[26] that the beginning of the new period (III) marks the disappearance of certain features, such as red ocher burials which had been present from the foundation of the site. Certain elements do continue from the Chashmah Ali period, so there was no abrupt break, but a variety of new features appear. There is, particularly in the ceramics, continuous change throughout the period, of a type which suggests very strongly that there was increasing pressure from the regions of the buff-ware culture to the southwest and south.[27] At the very end of the period, doubtless before pressure from invaders who made unpainted, gray pottery, certain peoples of the Hissar culture, traces of whom are found in the topmost phase of Giyan V, moved westward.[28]

[24] *SAOC*, No. 23, pp. 26, 28–29; 23; 35–38.
[25] Table 1 below; *SAOC*, No. 23, pp. 5–13.
[26] For this period see *Sialk I*, pp. 36–58.
[27] *SAOC*, No. 23, pp. 24–26, 30–32.
[28] *Ibid.*, pp. 18 f.

Siyalk, because of the numerous subdivisions of the level representing this period, provides the best information for the development of culture in the Hissar period; but the same culture is represented at a good many sites in the northeast. At Chashmah Ali it is known and seems to have come to an end at about the time of the fifth phase of Siyalk III. From what is known at present of the Chashmah Ali material, the two sites have a nearly identical culture.[29] Other sites to the east were founded at this time, including Shah Tepe, Turang Tepe, and the following. Close to the beginning of the period at Siyalk the site of Tepe Hissar[30] was occupied. Its first phase (Hissar I A) derives from the preceding Chashmah Ali culture, though from a provincial form like that already encountered at Anau. In the succeeding two phases at Hissar, changes similar to those in Siyalk III are found, including those attributable to buff-ware culture influence. Hissar I, however, is throughout peripheral to the Hissar culture and may have come to an end a little earlier than the close of the period at Siyalk; but the end of both is to be connected with the influx of peoples making unpainted, gray pottery.

In the upper part of the first level at Anau[31] little change can be detected from the lower phase of this stratum, for Anau I throughout is a provincial form of the Chashmah Ali culture and never experienced the changes which occurred during the Hissar period at Siyalk, Chashmah Ali, and Hissar. The wheel and cast metal remained unknown. Indeed, the Hissar culture cannot be said to extend north of the Elburz Mountains, including the pocket of the Gurgan Plain. There is evidence to show that Anau I B lasted into the Hissar period, but the end of Anau I can be dated to the end of the Hissar period only by inference.

Little can be said of village planning in the Hissar period; there was probably as much—or as little—as there is in the modern near eastern village. We know a little more of house planning. At both Hissar and Siyalk the corners are roughly oriented to the cardinal points, perhaps to give the maximum of shade. Only from Hissar I C are there enough plans of houses to show that they are rectangular and roughly quarter-

[29] *Ibid.*, p. 7.

[30] See Schmidt, *Hissar*, pp. 23–87; *SAOC*, No. 23, pp. 7–11.

[31] Anau I B (+0–25 feet; *SAOC*, No. 23, p. 12).

ed inside. The walls are made of beaten mud or mold-made bricks—a new improvement. The rooms provide features common to architecture: rectangular windows, doorjambs with curved or rectangular ends, more primitive creep holes, and fixed hearths. Wall niches inside the houses occur toward the end of the period, as do buttressed outer walls. There is no suggestion that the buildings with buttressed walls are of more than ordinary importance, though their walls are of the same width as the other house walls and need no more support.

About the middle of this period the metal-worker's industry shows considerable growth in both technical capacity and quantity. Man has learned that copper, when melted, can be cast in the form of useful implements. This part of Iran has at last entered the Copper Age. The use of this metal seems to be much increased also. Celts and adzes of copper now nearly replace stone axes and hoes. Serviceable knives and chisels are manufactured. Various forms of needles and awls cause bone awls to disappear. Copper pins appear to be commoner than heretofore. Even vessels are made of copper. Two new metals make their appearance: lead at Anau and silver at Siyalk.

With all these copper tools it is no wonder that vessels are also made in attractive alabaster and that beads, at Siyalk, are of elaborate form. Button seals of stone are also a new product in this culture. Animal figurines occur as in the Chashmah Ali culture. It is significant that human figurines are found at none of the sites in northeastern Iran.

The black-painted red ware of the Chashmah Ali culture, which was still being made at the beginning of the Hissar period, had been replaced toward the end of the latter period by a ware very much like that of the buff-ware culture. At the same time many designs typical of the buffware culture had been taken over.[32] Controlled firing of the pottery implies that during this period a proper kiln with separate combustion and firing chambers was in use. The forms of the vessels are more elaborate than those of the earlier times and by the end of the Hissar period are quite sophisticated. The designs, which are well adapted to the forms of the vessels on which they were placed, show good composition and a very satisfactory variety. The animal style is very different from that of the Chashmah Ali period and is in part

[32] *Ibid.*, p. 24.

intimately related to that of the buff-ware aspect of Fars. A static character is typical from the beginning; the ibex in particular progressively lose their decorative character. Perhaps naturally connected with this is a slightly greater interest in natural detail at the end of the period at Siyalk which culminates in a combination of various types of fauna and flora giving the impression of a scene.

The period was apparently still peaceful, though the simple arms of the preceding period were augmented by the use of bows and arrows, assured by the discovery of a few arrowheads at Tepe Hissar. Weapons designed particularly for offense are, at least, unusual, and none of the villages in all Iran is located with a view to defense.

The Hissar culture differs likewise from its predecessors[33] in the provision of burial equipment for the deceased, and thus we learn much concerning the people of this time from the tombs of Tepe Hissar. Interments are still inside the village and sometimes below the houses. Hissar shows a regular funerary orientation, unprovable in the few graves at Siyalk, with the body laid loosely flexed on the right side facing east or west. The contents of the graves reveal a great love of ornament, a feature not so marked at Siyalk. Both men and women wore necklaces and bead belts; the latter, however, appears to have been more often part of the male attire. Only women seem to have worn bracelets and (rarely) anklets. Pins were another necessity for each individual, though perhaps less frequently with men than with women, yet their peculiar position in the graves suggests that they were not part of the actual dress of the deceased. On the bodies of men and women were found incised buttons, sometimes numerous and of graded sizes; some, therefore, are ornaments rather than seals.[34] The dead were well provided with vessels containing food, but it is of interest that they were not supplied with tools.

Women were treated to interments as rich as those of men, if not richer; their position was, then, not a lowly one. This is not surprising when we realize that they never comprised more than one-third of the adult population. Schmidt's suggestion of polyandry may well be correct. From the richness of the burial gifts we would judge that the

[33] Only one of fifteen burials is provided with gifts in *Sialk* I and II.

[34] *Hissar*, p. 300.

middle of Siyalk III (III 5) and the last phase of Hissar I were the most prosperous times of this period.

Contemporary with the Hissar period is a considerable amount of material from the buff-ware culture. The great distances between the excavated buff-ware sites of this time, Giyan V C, D, Susa I, and Tall-i-Bakun A, and the fact that these represent variant forms of the buff-ware culture and show somewhat differing development, makes generalization as to the buff-ware culture as a whole uncertain. At Giyan,[35] from the second phase, a gradual development seems indicated. The third phase, C, which is contemporary with most of the Hissar period, appears to have been affected by pressure from other buff-ware aspects to the south and southeast. Then in the last phase, though buff-ware designs still continue, there is strong influence from the last stages of the Hissar culture. With this phase the buff-ware aspect of Tepe Giyan comes to an unexplained end. It is a surprise to discover stone building foundations and a drain in the early part of the third phase of Giyan V,[36] and, though they are unique for this early time in Iran, they indicate the relatively developed state of civilization.

Susa I[37] was settled at a date roughly about the beginning of the Hissar period, though this point cannot yet be fixed with precision. The stratification of the deposit is not known, and hence no development can be traced. Sometime during the accumulation of this stratum appears (usually undecorated) red pottery, the bearers of which brought to a close the buff-ware culture of Tall-i-Bakun A.[38] On this basis, and by comparison with Giyan V C and Siyalk III, it is likely that Susa I came to an end a little later than did the buff-ware aspect of Bakun A, or possibly about the time of the sixth phase of the Hissar period at Siyalk.

It is now established that the buff-ware aspect known from Musyan and its surrounding sites was in Khuzistan before the buff-ware variant of Susa I appeared.[39] Since no published stratified material of the Musyan aspect exists, it is impossible to know when it was first represented in this area or when it disappeared. It does show fairly close connec-

[35] *SAOC*, No. 23, pp. 14–19, 28–29.
[36] *Giyan*, p. 11 and Pl. 6.
[37] *SAOC*, No. 23, pp. 19–22, 27–28.
[38] *Ibid.*, p. 48; McCown in *OIP*, LIX, 32 f.
[39] *SAOC*, No. 23, p. 22, and n. 39.

tions with the buff-ware aspect of Fars, even closer than with that of Susa I.

In Fars the stratification at Tall-i-Bakun[40] is broken after the last phase of the B mound (B II) and continues only after an interval in the A mound (A I–IV). There is some change, but this is presumably due only to local development, unless Halafian influence, which is difficult to explain, may have resulted in the appearance of certain new features.[41] In Bakun A, up to the fourth level only local development is apparent, though there is slight evidence of contact with the Hissar culture. The buff-ware aspect of Bakun A had seemingly not passed into the Copper Age, but its civilization[42] was reasonably advanced. The buttressed walls[43] of one building in the Hissar culture, the use of mold-made bricks, and plastered and painted walls, all point to a respectable village architecture. The houses were grouped together in solid clusters. In the open areas between these were located efficient pottery ovens with separate combustion and firing chambers, which are also known at Susa I. These people possessed adequate technical equipment, showed by their seals a strong sense of personal ownership, and expressed their aesthetic feeling in a wealth of forceful and attractive designs on their pottery vessels. All this was brought to an end by people who made unpainted, red pottery and who, after an interval, settled on the site.

Correlation between the buff-ware aspect of Fars and the Hissar culture cannot be considered as absolutely certain, but the most reasonable picture which the available material suggests is the following: Bakun A began roughly at the beginning of the Hissar period. Throughout the existence of the buff-ware settlement here, pressure seems to have been exerted on the Hissar culture by the buff-ware variants of Fars and of the Susa and Musyan region—a pressure which is reflected strongly by the middle of the period (Siyalk III 4-5). By the sixth phase of Siyalk III some of the peoples of the buff-ware as-

[40] *Ibid.*, pp. 23 f.

[41] *Ibid.*, pp. 33–35.

[42] See Langsdorf in *OIP*, LIX, 5–20; Schmidt, *OIC*, No. 21, pp. 121–29.

[43] Such walls in Bakun A, Siyalk III, and Hissar I seem, on first consideration, too simple to support comparison with the developed niching in the temples of Gaura XIII. Nevertheless, it is well to remember that the Iranian buildings with buttresses seem to be village residences only. No Iranian buildings are known of a purpose comparable to the Gaura structures.

pect of Fars had been displaced by people with red pottery (as at Bakun A in level V), and this resulted in a flood of buff-ware cultural influence on the Hissar culture which was augmented slightly later about the end of Susa I.[44]

The regional variation of the different aspects of the buff-ware culture should now be apparent. These different forms of the buff-ware culture are not merely successive stages, as has been assumed, but are geographical variants of one original culture, their formation favored by the mountainous character of the territory which they occupied. One aspect may be recognized in the area from the region of Fars to the Persian Gulf; another, represented by Musyan, in Khuzistan and southern Luristan; a third, by Susa I; a fourth extends from Kuh-i-Dasht to Tepe Giyan in northern Luristan, with probably still another between Susa and central Luristan.[45] These various areas show contemporary aspects of the same culture, diverging from, and in part converging on, the basis of an as yet unknown, earlier stage of the buff-ware culture. Its diversity is largely shown in pottery design. This may be of greater archeological than cultural significance, though there might well be some connection with tribal groups.

In the buff-ware culture as a whole, the actual living conditions and basic way of life were the same as in the cultures of northeastern Iran, but the buff-ware culture seems not to have abandoned hand-turned pottery in preference to wheel-made. Yet, in contrast to the northeastern cultures, the story of development is almost unknown. We have no precise information on domestic animals, though the animal figurines prove that animal husbandry played an essential role by, at any rate, the time of Bakun A. The physical type of the people is also unknown. It is not until Giyan V C, Bakun A, and Susa I that we have considerable information, and then the general cultural level and content is much like that of the Hissar culture. Interestingly enough, at this time we first recognize wealth emphasis in both areas, at Bakun A III in the form of House VIII, and in the Hissar culture in the tombs. We do not know why distinct cultures should have occupied these two, not unconnected, regions. Knowledge of ecological factors in Iran is too limited to permit cultural correlation. It is only possible

[44] See n. 27.

[45] *SAOC*, No. 23, pp. 26–27, 33.

to point out the features of the buff-ware culture which are to be found in the Hissar culture. Two of these are certainly important.

Both at Susa and at Bakun A human figurines were found.[46] These are unknown in the northeast. That they are divine figures is very unlikely. Unless the peoples of this culture were much more advanced than they appear to be, we cannot imagine that these figurines meant more than the giving of concrete form to a feeling for the natural force of fertility. Unfortunately, evidence is lacking to prove that human figurines were made at an earlier time.

Furthermore, it appears certain that the peoples of the buff-ware culture buried their dead outside their villages, in contrast to northeastern burial custom. We seem to have positive evidence of this at Susa. Child burials, possibly inside the village, need not be considered as a contradictory practice. In the rest of the buff-ware cultural area, despite a considerable amount of digging, no adult burials have been found in village sites. In Giyan V C only three infant burials (in pots) have been unearthed. Stein's work in Fars and elsewhere and the excavations at Tall-i-Bakun go some way toward showing that interments were not made inside the settlements during the earliest known stages of the buff-ware culture. At Susa, a considerable burial equipment accompanied each skeleton, but this also is known in the Hissar culture, so that we cannot be sure that this is an older characteristic of the buff-ware culture. The burials in Susa I show a diversity of burial customs unknown in the northeast.

II

The picture of internal conditions within Iran during the earlier periods remains incomplete without a consideration of Iranian relations with Mesopotamia. The Samarra culture[47] has generally been recognized as Iranian. To this we can now add that it is most closely related to the buff-ware aspect of Fars at the time of Bakun B II, and that it is contemporary with that phase, with Giyan V A, and with part of the Chashmah Ali culture. It seems most likely that the Samarra culture did not derive from Fars but that both it and the Fars

[46] It would not be surprising if their apparent absence at Giyan was due to an accident of publication.

[47] *SAOC*, No. 23, pp. 35, 37–38.

aspect (Bakun B II) entered their respective regions at approximately the same time and were brought by peoples with a common civilization already differentiated to varying degrees.

The Chashmah Ali period, Giyan V A-B, probably the earlier phases of the Musyan aspect, and the buff-ware aspect of Fars some time during Bakun B II, are contemporary with the Halaf period.[48] There is some evidence of contact between the Halaf and northern Iranian cultures, but there are no indications that any Iranian culture is genetically related to that of Halaf. At the very end of the period, when the Ubaid culture was penetrating Mesopotamia from Iran, all of Iran was affected in varying degrees by the Halaf culture. At Giyan this influence is traceable from the middle part of V B into the first half of V C. The early part of Siyalk III and Bakun A also reflect it, as does Susa I, though it may well have come just before the two former sites were occupied. As a result, some new features—for example, possibly stamp seals—were added to the Iranian cultures, but they do not appear to have been profoundly modified.

There is no reason to doubt that the Ubaid culture [49] did derive from Iran and mainly from the Fars and Susa I aspects of the buff-ware culture, though the Giyan variant seems to have given certain distinctive features, particularly in northern Mesopotamia. There is also a considerable body of evidence to show that the Hissar period, Giyan V C, Susa I, and the Fars aspect of Bakun A were contemporary with the Ubaid period. We are still at a loss to explain why there was a movement out of Iran which produced the Ubaid culture in Mesopotamia. Despite the present uncertainties in attempting closer correlation, the following general picture is suggested. Some sort of expansive force and internal readjustment affected the peoples of the buff-ware variants of southern and southwestern Iran after the time of Bakun B and before or about the beginning of the Hissar period. This manifested itself in Iran by the settlement of Susa I and by the influence seen in Siyalk III up to its fourth or fifth phase. At the same time, it resulted in the appearance of the Ubaid culture in Mesopotamia—an event of considerable magnitude, since the cultures there in place were profoundly modified as far as North Syria. Possibly to be correlated with

[48] *Ibid.*, pp. 33–35.

[49] *Ibid.*, pp. 36–37, 39–42, 44 f.

the end of the buff-ware culture in certain parts of southern Iran is the appearance of new buff-ware influence at a later time in northern Mesopotamia, observable in Gaura XIII. Then, at roughly similar times, the buff-ware and Ubaid cultures were brought to an end by the appearance of peoples who made plain gray or red pottery.

III

The advent of new tribes with different cultures must have seemed catastrophic to the natives of the buff-ware and Hissar cultures. Susa is the only known center which was inhabited continuously throughout the Uruk and Jamdat Nasr periods in western and southwestern Iran. In these regions the other sites were either deserted permanently or were not reoccupied for some time. Yet our only evidence, from Tepe Hissar, shows that the invaders were of races already known on the Iranian plateau, however different their culture might be. In Hissar II the population remains basically a small, gracile Mediterranean type.[50] It seems not improbable that the same will prove to be true of the rest of Iran.

The archeological break at so many sites precludes a sure answer as to what became of the makers of the painted pottery. In northeastern Iran, with the exception of Siyalk, there is an intermingling of the Hissar culture with the new gray-ware culture for what may have been, relative to the length of the period, a very considerable time.[51] There may have been such a period of transition at Susa (B 1),[52] for some of the red ware is painted; but then a new current sets in, linking Susa more closely to Mesopotamia. In Fars,[53] at Bakun A, it is doubtful whether there is a transition from the buff-ware culture to that characterized by red pottery (A V); painted pottery, however, does not seem to have died out completely in Fars, for there is some painted red and gray pottery later than the buff-ware aspect of this area and contemporaneous with some part of the Uruk or Jamdat Nasr periods. We may infer that not all the natives of Iran were content to mix with

[50] Krogman, *Racial Types*, p. 13.

[51] *SAOC*, No. 23, n. 17 and p. 50.

[52] At Susa, following Susa I, one period (Susa B 1–3) may be recognized which is coexistent with the Uruk period; another (Susa C), contemporary with the Jamdat Nasr period; and a third (Susa D 1–2), contemporary with the Early Dynastic period. See n. 57.

[53] *SAOC*, No. 23, pp. 48 f.

or be subordinate to the invaders. There is clearly some connection between the Fars buff-ware aspect and the Amri and Nal cultures of the Indus Valley and southern Baluchistan, to judge from the similarity in pottery design. Likewise, there is a remarkable resemblance between some vessels of the Hissar culture and the earliest painted pottery of the Loralai region of northern Baluchistan.[54]

Unfortunately it cannot be shown that any of these eastern cultures existed before the Jamdat Nasr period. Their ware, in part buff slip over red body, suggests that the makers of this pottery had been influenced by people who made red ware. Thus, though the survival, far to the southeast of its original home, of painted pottery in the style of the buff-ware and Hissar cultures is indicated, we cannot attempt to explain the manner in which this happened.

Survival of painted pottery of the old style in the former area of the buff-ware culture is completely uncertain. The designs of the above-mentioned pottery from Fars are too simple to connect safely with the buff-ware culture. Many problems would be solved if this connection could be proved. Evidence from Susa in this respect is completely negative, nor is there any indication that the early designs survived on materials other than pottery. Whence came the impulse to paint pottery in the Jamdat Nasr period, and in both Mesopotamia and in Iran during the Early Dynastic period, is uncertain. Evidence and inference would point to its survival in Iran or to the introduction of the idea from India rather than from Asia Minor or Syria. It seems reasonable to conclude, then, that future excavation will probably show that the earlier type of painted pottery survived in isolated and remote localities in Iran. If a most limited painting tradition could survive at Hissar[55] as late as the Early Dynastic period, it would be strange if a changed, though somewhat vigorous, form of the old painting style did not continue in regions where a greater degree of independence could be maintained than in the plains of northeastern Iran.[56]

[54] For this information I wish to thank Brigadier E. J. Ross, whose important report on a stratigraphic study of Rana Ghundai is in preparation.

[55] *Hissar*, p. 178.

[56] For two survivals of unusual elements see McCown in *OIP*, LIX, 66 (n. 13) and 72 (n. 14).

In the former area of the buff-ware civilization, we can follow the changes of culture only at Susa,[57] which is not typically Iranian, since it was so strongly and so easily influenced by Mesopotamia. In the first phase of Susa B the pottery is red; its forms are not yet published but it seems to be the same ware as was found in Bakun A V and Warka XIV. We are fortunate to have from this phase a series of bone tools with incised designs. Although the meaning of the designs is not always clear, some represent men and animals. At times the human figures appear to wear short tunics[58] and conical, domed or squared hats. One wears shoes with upturned toes,[59] a type of shoe seen here again in the Jamdat Nasr period.[60] On these objects we also recognize the earliest examples of men riding (presumably) horseback and using reins to guide the animal.[61] The men's faces are portrayed generally in front view, in contrast to the style of Susa I and Susa D. Animal designs are of special interest because drawn in a style completely different from that of Susa I. There would have been no difficulty in engraving the outlines of the bodies in the form of two triangles, as in Susa I, but, instead, rectangles or a single stroke represented the trunk, to which were added the extremities.

We know nothing of architecture during the Uruk period except that large bricks of various sizes were employed[62] and that silos with open tops were used to store rice[63] and probably other grain.

During most of the Uruk period at Susa the areas investigated were used as burial grounds. We know little more than that the bodies were laid in trenches and provided with pottery vessels, including crude bevel-rimmed bowls and other shapes paralleled in Warka XII-VI. The bodies were at first without ornament, though in the latter part of the period (Susa B 3) the graves are somewhat richer in equipment and the bodies are provided with ornamented copper pins. Here begins the practice of placing with the children peculiar little clay, bitumen, or stone objects which may have been amulets or toys.

[57] *SAOC*, No. 23, pp. 43 f.

[58] Mecquenem, *Mém.*, Vol. XXV, Fig. 38:22c.

[59] *Ibid.*, Fig. 38:19.

[60] *Ibid.*, Fig. 31.

[61] *Ibid.*, Fig. 38:25.

[62] We cannot credit the use of baked bricks (*ibid.*, p. 200) until more details as to their discovery are available, for we know that later wells lined with baked bricks pierced the mound.

[63] *Ibid.*, pp. 182 f.

Throughout the Uruk period only stamp seals were used. Their designs are in part in a style different from those known earlier in Iran.[64] The geometric designs are also better adapted to the circular form of the seals than are other patterns, particularly animals which, along with human figures, are known.

On the whole there is no indication that the general level of material culture was lowered, except in one respect. Metal does seem to have been rarer, for the graves do not contain many objects of copper. However, the technique of metal-working shows no decline, for good cast hoes with shaft hole[65] and double axes [66] were available.

The Jamdat Nasr period[67] developed without break from the Uruk period but was apparently considerably more prosperous. The tombs are still of the same type, but they are better supplied, and the dead are provided with beads. At this time Susa underwent many of the changes which took place in the Jamdat Nasr period in Mesopotamia. Writing appears both here and at Siyalk. The impetus must have emanated from Mesopotamia, but nothing is known of the language. If it were Sumerian, a script identical with the early Sumerian elsewhere would doubtless have been used, but the signs are quite different. The seal cylinder comes into use. The designs are so similar to those of Mesopotamia that it is difficult to distinguish native elements, although fantastic animals or normal animals in fantastic posture are perhaps more typical at Susa than in the lowlands. In contrast to Mesopotamia, pottery was not decorated to any extent. Thus, though Susa is very profoundly influenced by its western neighbors in this period, it may be that the differences indicate that it was independent politically.

The presence at Tepe Siyalk of a settlement which shows close identity with the remains of Susa C[68] makes it clear that the region later called "Elam" must have exercised considerable control over other parts of Iran. Siyalk may have been the site of a proto-Elamite trading station or caravan post; at any rate it must have been settled in part and controlled by people from the center of proto-Elamite

[64] *Ibid.*, Fig. 17; R. de Mecquenem, "Fouilles préhistoriques en Asie occidental (1934–1937)," *L'Anthropologie*, Vol. XLVIII (1938), Fig. 1:2, 4.

[65] Mecquenem, *Mém.*, Vol. XX, Fig. 4, left.

[66] Mecquenem, *Mém.*, Vol. XXV, Fig. 4.

[67] *SAOC*, No. 23, p. 44.

[68] *Ibid.*, pp. 51, 54; *Sialk I*, pp. 58–71.

culture. This implies control of routes from the proto-Elamite region to Siyalk by forceful or diplomatic means and suggests that whatever state the traders represented must have been well organized and reasonably powerful. In the remainder of western Iran no sites of this period are known, with the possible exception of one near Lake Urumiah,[69] whose pottery may show connections with Ninivite V.

We have already seen that at certain sites in northeastern Iran, such as Tepe Hissar, the shock of the arrival of new tribes with a different culture was not great. The really profound change came later and is represented by Hissar II B.[70] Aside from a new ware and different pottery forms, and—more important—the custom of making female figurines, Hissar II A does not differ significantly from the preceding period. May it be that the newcomers brought with them an element with a provincial form of the Chashmah Ali culture which resulted in the reappearance of pottery designs and coloring techniques comparable with those of Hissar I A?[71] Hissar II B, though certainly related to Hissar II A, is not identical with it. Despite the predominance of the gray-ware culture in Hissar II B, the population remained basically unchanged, though the skeletal material provides an inadequate sample on which to base any correlation of culture and physical type.[72]

Our knowledge of this culture derives almost solely from Tepe Hissar, for only two graves of the period were found at Turang Tepe,[73] and we have, as yet, little but pottery from Shah Tepe.[74] Except for pottery, the culture traits of Anau II[75] differ so little from those of Anau I that they throw little light on the culture of Hissar II B. The beginning of this period comes at the start of the Uruk period; its end coincides roughly with the close of the Jamdat Nasr period.[76]

In Hissar II B it is significant that the rules of burial orientation, which derived from Hissar I, disappear, together with the love of bead ornament. If the newcomers did not borrow a typical seal pattern with quartered circle design, they at least shared it with the Hissar culture. The seals of Hissar II B, however, are much more elaborate in form and are made of copper. Indeed, the prevalence of copper is

[69] *SAOC*, No. 23, pp. 49 f.
[70] *Ibid.*, p. 50; *Hissar*, pp. 106–40.
[71] *Hissar*, pp. 108, 303.
[72] Krogman, *Racial Types*, pp. 12 f.
[73] *SAOC*, No. 23, p. 55.
[74] *Ibid.*, p. 54.
[75] *Ibid.*, pp. 57 f.
[76] *Ibid.*, p. 51.

the striking fact of Hissar II B. It is of this material that distinctive new ornaments and maceheads are made. New weapon forms are uncertain (though the use of a midrib on knives[77] is a technical improvement), and metal vessels are still rare. Silver and gold are rarely used for ornaments.

So far as we can tell from somewhat limited evidence the peoples with the culture of Hissar II B lived in a small world of their own. They seem to have come into little contact with representatives of the proto-Elamite region, as at Siyalk. Furthermore, Anau II is dissimilar enough to make it appear that the culture of Hissar II B was limited on the north, except in the Gurgan Plain, by the eastward extension of the Elburz Mountains. We suspect that Anau II had some contact with the Baluchistan area because polychrome pottery is present in both;[78] but, again, there is no trace of such contact from Hissar II.

About the end of the Jamdat Nasr or at the beginning of the Early Dynastic period[79] new tribes came to the northeastern part of Iran. Physically, they too were not strangers, though the statistically acceptable sample from Hissar III shows that there is a very considerable increase in a rugged Mediterranean type which previously had been present only sporadically.[80] Oddly enough, of the forty individuals of this type which could be studied, all but one were males.[81] Explanations of this fact are difficult. The period was of such length that these men cannot represent a vanguard of males who would be followed at some later date by their families. Furthermore, a transitional period, III A, suggests infiltration rather than invasion by force. Yet it is tempting to infer that the end of the proto-Elamite settlement at Siyalk implies the latter. Whence came this new culture, and equally that of Hissar II, is completely uncertain, though it seems improbable that it could have been only from the Turkoman steppe.[82]

[77] *Hissar*, Pl. XXIX H, 3012.

[78] *SAOC*, No. 23, p. 58.

[79] *Ibid.*, pp. 51–53.

[80] Krogman would call these proto-Nordics. An archeologist or historian cannot unqualifiedly accept such a conclusion until there is some concensus among physical anthropologists as to what constitutes a Nordic skeletally, or until archeological evidence shows connections with a region which Nordics are believed to have inhabited.

[81] Krogman, *Racial Types*, p. 17.

[82] *SAOC*, No. 23, pp. 59, 61.

With a change in period, it is necessary to attempt to disentangle what is original in the new culture and what may have been borrowed from that preceding. In this case there is little difficulty in distinguishing what is new, but the problem is complicated by the possibility that Hissar II and III are basically related. After Hissar III A, the similarity to Hissar II is seen mainly in ornaments.[83] There is no means of determining whether such traits were borrowed from Hissar II or whether they demonstrate a fundamental relationship, which is suggested by the use of gray pottery in both periods. The latter possibility may be favored by the facts that in both Hissar II and III the burials are not oriented, and female figurines play an important role, but the absence of these two traits in the Near East is more unusual than their presence.

This period[84] was one of the most prosperous which the region had ever known. The wealth of copper, silver, and gold, and the ability to cast and work these metals in a variety of useful and artistic forms, are indeed impressive. An improved and extensive armament indicates how important a role the warriors must have played. The use of the chariot must have added mobility to the attack. If such an assault as destroyed parts of the Hissar III B settlement is typical, then the times may have been none too peaceful. Hoards of Hissar III C suggest that the same warlike conditions continued to the end of the period, interrupting the normal pastoral and agricultural life.

The "Burnt House" of Tepe Hissar III B provides a fine example of a fortified dwelling of a local chief or, at least, an inhabitant of considerable wealth and importance. Ordinary houses were characterized by a central hearth in a big main room, a feature also typical of Hissar II.

There is little reason to doubt that at this time there was a well-developed cult concerned with natural forces. The variety of female figurines found at the various contemporary sites[85] is clearly to be connected with fertility, as are also male figurines from Turang Tepe and Tepe Hissar, though there is still no evidence to prove conclusively that the feeling for a principle of fertility had been abstracted into a divinity. With some probability, one hoard may be assumed to consist

[83] *Ibid.*, p. 51.

[84] *Ibid.*, p. 51; *Hissar*, pp. 155–261.

[85] *SAOC*, No. 23, p. 57.

of cult objects.[86] Whether alabaster disks and columns are to be connected with some form of the cult is extremely uncertain, for two hoards in which they were found contained many other objects of practical use, unless they were votive deposits, for which there is no suggestion. Such objects were also found as burial equipment in some of the richer graves.

Little can be said of the artistic mentality of these people. They were fond of ornament; not only is their jewelry attractive and well developed, but they enlivened their pottery with designs in pattern burnish. Attempts to compose designs for circular seal patterns are on the whole not unsuccessful, though many of them are overcrowded with design.

Perhaps the most interesting feature of the period is the contact with outside regions, for this area was no longer as isolated as it was in the previous period. Contacts with Mesopotamia were presumably largely due to commerce in lapis lazuli, a traffic which was very considerable to judge by the use of this stone in Mesopotamia. As the horizon had opened to the west, so it had to the north, for Anau III shares a number of traits with the culture south of the mountains.[87] There was probably contact with settlements in Sistan and Baluchistan; this is almost certainly true of Anau at least. But, as in the preceding period, this evidence suggests that the important routes to Sistan and Baluchistan were farther east than the region where we know the culture of Hissar III, perhaps through Meshed or even Herat.

It is uncertain what brought the thriving settlements of this period to a close about the time of the end of the Early Dynastic period or slightly later. It can scarcely be a coincidence, however, that the three excavated sites with remains of the last stage of the period should have ceased to be occupied at about the same time. There are, however, some indications which would correlate this event with a change of culture in the Zagros.[88]

Contemporary with the Early Dynastic period, and perhaps with the Akkadian period as well, a fairly uniform culture[89] is found spread through the western mountains of Iran from Susa to as far north as

[86] *Hissar*, p. 157, and Figs. 87–88.
[87] *SAOC*, No. 23, pp. 58–60.
[88] *Ibid.*, pp. 53, 57.
[89] *Ibid.*, pp. 47 f.

Tepe Giyan (level IV). While there are some differences between the north and the south, this culture in general is more uniform than the buff-ware culture which earlier occupied the same region. Whence it came is again wholly uncertain, though it seems to have been influenced by people who made red pottery. In the southern area, influence from the civilization of the Early Dynastic period of Mesopotamia is quite marked, as it is in the tombs at Aliabad and Khazineh at the time of Early Dynastic I or II.[90]

Remains of the Early Dynastic period at Susa[91] are too incompletely published to be very informative, but continuance of the previous close connections with Mesopotamia is attested by archeological and also inscriptional evidence in Early Dynastic III.[92] At Susa we are sure of the presence of remains datable to Early Dynastic I only from painted pottery, which may have been imported, and from cylinder seals. Somewhat more extensive evidence discloses connections through Early Dynastic III. It is obviously impossible from such evidence to decide what was the political relation to Mesopotamian dynasties. There is, however, little doubt that Susa was not inhabited to any great extent by Sumerians. Despite the many common cultural traits shared by the two regions, the dissimilarities (e.g., the absence of plano-convex bricks) militate against the existence of a uniform culture. Furthermore, we know that during Early Dynastic III a fairly uniform culture, of which Susa in its non-Mesopotamian features was part, existed throughout the western mountains. About the time that Susa was forced to accept the suzerainty of the Akkadian Dynasty, it would seem that the northern mountain zone[93] was overrun by people who at the beginning of the period buried their dead in stone cists and may have had Anatolian or Caucasian connections.[94] Into this phase we do not propose at present to go. A connection with the Guti invasion of Babylonia is possible, though the Guti seem to have lived north of the region from which we have archeological knowledge.

[90] *Ibid.*, p. 46.

[91] *Ibid.*, pp. 45 f.

[92] George G. Cameron, *History of Early Iran* (Chicago: University of Chicago Press, 1936), pp. 22–25. For the attribution of the early kings to Early Dynastic III see Thorkild Jacobsen, *The Sumerian King List* ("Assyriological Studies," No. 11 [Chicago: University of Chicago Press, 1939]).

[93] *SAOC*, No. 23, p. 48.

[94] *Giyan*, pp. 31–34, 94–100.

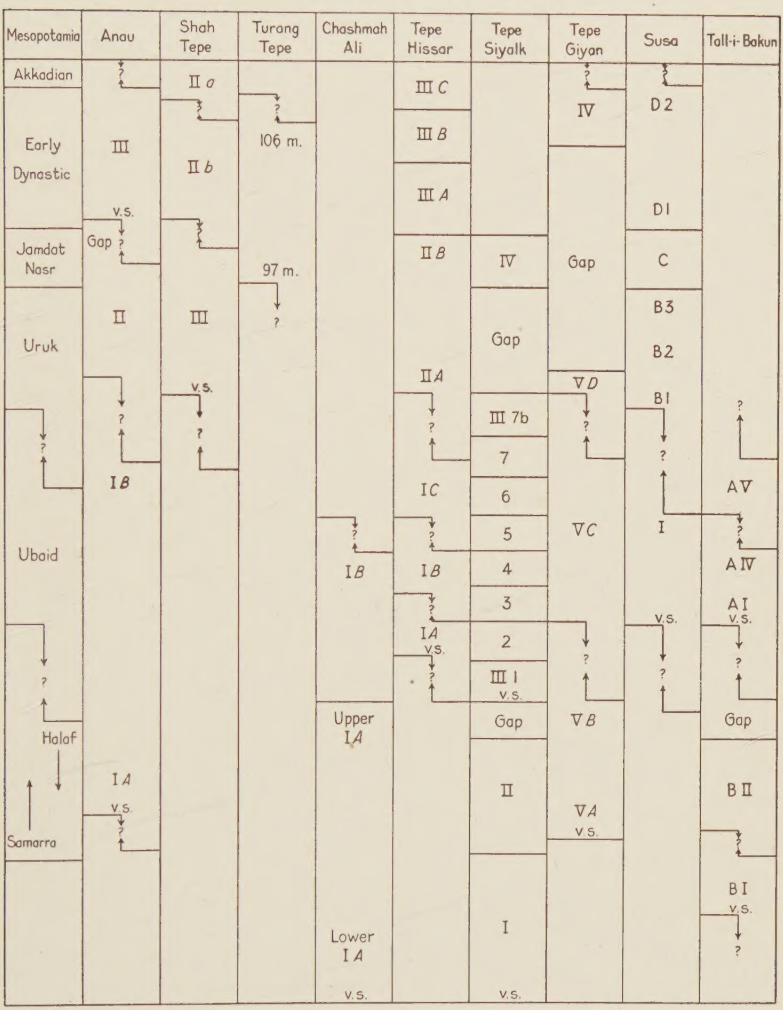
TABLE 1

THE EARLIEST CULTURES OF MESOPOTAMIA AND IRAN

Mesopotamia	Northeastern Iran	Western Iran
UBAID CULTURE	HISSAR CULTURE Siyalk III Hissar I Chashmah Ali I B	BUFF-WARE CULTURE Susa I Bakun A Giyan V Bakun B II
HALAF CULTURE SAMARRA CULTURE	CHASHMAH ALI CULTURE Siyalk II Chashmah Ali I A Anau I	
	SIYALK CULTURE Siyalk I Chashmah Ali I A	

TABLE 2

COMPARATIVE STRATIGRAPHY*



* The vertical height of a column covered by a period obviously does not indicate length of time. The relative upper and lower limits of the levels and Mesopotamian periods are indicated by the horizontal, opposed half-lines joined vertically by arrow-headed lines separated by question marks. Thus in the column headed "Tepe Hissar," Hissar I C may end as late as Siyalk III 7*b*, or Hissar II A may start almost at the beginning of Siyalk III 7. Virgin soil is abbreviated "v.s."

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